

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 3-7, 10-11, 13-16, 20-24, and cancel claims 2, 8-9, 17-19, as set forth in the listing of claims that follows:

Claim 1. (Currently Amended) A temperature sensor comprising:

a substrate;

a membrane supported by the substrate; and

an electrical circuit disposed on the sensor and configured to determine

a first substrate electrical resistance ~~configured to be primarily~~ responsive to a temperature of a the substrate;

a second substrate electrical resistance responsive to the temperature of the substrate;

a first membrane electrical resistance ~~configured to be primarily~~ responsive to a temperature of a the membrane;

a second membrane electrical resistance responsive to a temperature of the membrane; and

wherein said first substrate electrical resistance, said second substrate electrical resistance, ~~and~~ said first membrane electrical resistance, and said second membrane electrical resistance are arranged in a bridge configuration ~~series circuit configured~~ to facilitate measurement of a differential voltage across each responsive to a temperature change.

Claim 2. (Cancelled)

Claim 3. (Currently Amended) The temperature sensor of Claim 1 ~~2~~ wherein at least one of said first substrate electrical resistance, said first membrane electrical resistance, said second substrate electrical resistance, and said second membrane electrical resistance exhibits a thermal coefficient of resistance in excess of about 1200 ppm.

Claim 4. (Currently Amended) The temperature sensor of Claim 1 ~~2~~ wherein at least one of said first substrate electrical resistance, said first membrane electrical resistance, said second substrate electrical resistance, and said second membrane electrical resistance exhibits a thermal coefficient of resistance in excess of about 1500 ppm.

Claim 5. (Currently Amended) The temperature sensor of Claim 1 ~~2~~ wherein said first substrate electrical resistance, said first membrane electrical resistance, said second substrate electrical resistance, and said second membrane electrical resistance are formulated with substantially equivalent materials.

Claim 6. (Currently Amended) The temperature sensor of Claim 1 ~~2~~ wherein at least one of said first substrate electrical resistance, said first membrane electrical resistance said second substrate electrical resistance, and said second membrane electrical resistance are formulated as part of a micro-electro-mechanical systems (MEMS) device.

Claim 7. (Currently Amended) The temperature sensor of Claim 1 wherein at least one of said first substrate electrical resistance and said first membrane electrical resistance exhibits a thermal coefficient of resistance in excess of about 1200 ppm.

Claim 8-9. (Cancelled)

Claim 10. (Currently Amended) The temperature sensor of Claim 6 wherein said first substrate electrical resistance and said first membrane electrical resistance is formulated as part of a micro-electronic machined device.

Claim 11. (Currently Amended) A system for determining a temperature comprising:

a temperature sensor comprising:

a substrate;

a membrane supported by the substrate; and

an electrical circuit disposed on the sensor and configured to determine

a first substrate electrical resistance and a second substrate electrical resistance ~~configured to be primarily~~ responsive to a temperature of a the substrate;

a first membrane electrical resistance ~~configured to be primarily~~ responsive to a temperature of a the membrane;

a second membrane electrical resistance configured to be responsive to a temperature of the membrane; and

wherein said first substrate electrical resistance, second substrate electrical resistance, ~~and~~ said first electrical membrane resistance and said second membrane electrical resistance are arranged in a bridge configuration ~~series circuit configured~~ to facilitate measurement of a differential voltage across each responsive to a temperature change; and

a controller in operable communication with said temperature sensor, said controller configured to receive a temperature signal indicative of a temperature change.

Claim 12. (Cancelled)

Claim 13. (Currently Amended) The system of Claim 11 ~~12~~ wherein at least one of said first substrate electrical resistance, said first membrane electrical resistance, said second substrate electrical resistance, and said second membrane electrical resistance exhibits a thermal coefficient of resistance in excess of about 1200 ppm.

Claim 14. (Currently Amended) The system of Claim 11 ~~12~~ wherein at least one of said first substrate electrical resistance, said first membrane electrical resistance, said second substrate electrical resistance, and said second membrane electrical resistance exhibits a thermal coefficient of resistance in excess of about 1500 ppm.

Claim 15. (Currently Amended) The system of Claim 11 ~~12~~ wherein said first substrate electrical resistance, said first membrane electrical resistance, said second substrate electrical resistance, and said second membrane electrical resistance are formulated with substantially equivalent materials.

Claim 16. (Currently Amended) The system of Claim 11 ~~12~~ wherein at least one of said first substrate electrical resistance, said first membrane electrical resistance said second substrate electrical resistance, and said second membrane electrical resistance are formulated as part of a micro-electro-mechanical systems MEMS device.

Claim 17-19. (Cancelled)

Claim 20. (Currently Amended) The system of Claim 11 wherein said first substrate electrical resistance and said first membrane electrical resistance is formulated as part of a micro-electro-mechanical systems MEMS device.

Claim 21. (Currently Amended) The system of Claim 11 ~~12~~ wherein said bridge configuration further includes an amplifier to buffer said differential voltage.

Claim 22. (Currently Amended) The system of Claim 11 ~~12~~ further including an amplifier and summer to facilitate scaling said differential voltage and extracting a first varying portion thereof.

Claim 23. (Currently Amended) The system of Claim 22 ~~11~~ wherein said first varying portion corresponds to variations of about 1 to 100 milliseconds.

Claim 24. (Currently Amended) The system of Claim 11 wherein said controller includes at least one of: an amplifier to buffer said differential voltage; and an amplifier and summer to facilitate scaling said differential voltage and extracting a first varying portion thereof.

Claim 25. (Withdrawn) A method of determining a temperature comprising:
receiving a temperature signal, said temperature signal indicative of a composite temperature variation including a first varying portion and a second varying portion;
configuring said temperature signal to eliminate said second varying portion; and
generating a temperature value based on said configuring wherein said temperature value is substantially based on said first varying portion.

Claim 26. (Withdrawn) The method of Claim 25 wherein said temperature signal comprises a differential voltage.

Claim 27. (Withdrawn) The method of Claim 25 wherein said configuring includes scaling said temperature signal and combining said scaled temperature signal with an additional signal to cancel said second varying portion.

Claim 28. (Withdrawn) The method of Claim 25 wherein said scaling includes a gain based on a thermal coupling and indicative of a relative proportion of said first varying portion and said second varying portion.

Claim 29. (Withdrawn) The method of Claim 25 wherein said temperature signal comprises a voltage from a bridge, said bridge formed with two pairs of resistances, a first pair corresponding to a substrate resistance, and a second pair corresponding to a membrane resistance.

Claim 30. (Withdrawn) The method of Claim 25 wherein said first varying portion corresponds to variations of about 1 to 100 milliseconds and said second varying portion corresponds to variations in excess of about 200 milliseconds.

Claim 31. (Withdrawn) A system for determining a temperature comprising:
a means for receiving a temperature signal, said temperature signal indicative of a composite temperature variation including a first varying portion and a second varying portion;
a means for configuring said temperature signal to eliminate said second varying portion; and
a means for generating a temperature value based on said configuring wherein said temperature value is substantially based on said first varying portion.